

RAN-2611000906044003

B.C.A. (NCF-NEP) (Sem. VI) Examination February - 2026
Computer Graphics (New) (Paper - 601-3)

[Total Marks: 50**સૂચના : / Instructions**

- (1) ઉપરોક્ત દશવિધ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
 Fill up strictly the above details on your answer book

Seat No.:

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Student's Signature

Q.1. [A] Answer the following MCQ. (Any 5)**[05]**

- [1] The full form of GKS is:
 A. Graphic Kernel System B. General Kernel Software
 C. Graphical Knowledge System D. Global Kernel Standard
- [2] Flight simulators and virtual labs are examples of computer graphics used in:
 A. Presentation B. Image processing
 C. Education and training D. Publishing
- [3] CRT stands for,
 A. Cathode Random Tunnel B. Cathode Ray Tube
 C. Cathode Random Tube D. Cathode Ray Tunnel
- [4] DDA stands for,
 A. Digital Differential Analyzer B. Data Differential Analyzer
 C. Data Differential Analysis D. None of these
- [5] What type of display system scans the entire screen line by line?
 A. Raster Scan B. Random Scan
 C. Vector Scan D. Character Scan
- [6] _____ transformation used to alters the size of an object.
 A. Scaling B. Rotation
 C. Translation D. Shear
- [7] A _____ is a transformation that produces a mirror image of an object.
 A. Scaling B. Translation
 C. Reflection D. None of the above

[B] Answer the following (Any 5)**[05]**

- 1) Give two examples of raster image file formats.
- 2) List various computer graphics standards.
- 3) Explain major and minor axis of ellipse.
- 4) Define line segment. Write the slope intercept equation of line.
- 5) Define frame buffer. What is the use of frame buffer?
- 6) List types of shearing.
- 7) Define scaling. Differentiate between uniform and differential scaling?

- Q.2. Answer the following questions in detail. (Any 2) [10]**
- 1) Write a note an application of Computer graphics in detail.
 - 2) Describe the objectives and importance of graphics standards.
 - 3) Describe raster graphics files and vector graphics files.
- Q.3. Answer the following questions in detail. (Any 2) [10]**
- 1) Write a note on shadow mask method of CRT.
 - 2) Explain difference between raster scan & random Scan display.
 - 3) Explain the Concepts of Point, Line, Circle, Ellipse and Polygons objects
- Q.4. Do as directed. (Any 2) [10]**
- 1) Explain Line caps & joints.
 - 2) Explain DDA line drawing algorithm in detail.
 - 3) Explain Bresenham's line drawing algorithm.
- Q.5. (A) Derive a transformation matrix for the given operation. (Any 2) [06]**
- 1) Derive a matrix for following operation. Take a point (4,3). Double the width & triple its height.
 - 2) Derive a matrix for following operation. Take a point (2,2). Shift the point by 3 unit right and rotate it by 90° clockwise.
 - 3) Give 3x3 homogeneous co-ordinate transformation matrix to move object down by 4 unit & right by 2 unit and scale x- Coordinate to make three times as wide
- Q.5. (B) Attempt any one. [04]**
- 1) Write short note on rotation about arbitrary point.
 - 2) What is reflection? Explain types of reflection with example.
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